

# TECOCHILL®

- Gas engine-driven chiller
- 350 refrigeration tons
- 218,000 sq. ft. medical center
- Marion, South Carolina



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**Natural gas engine-driven chiller contributes emergency service and savings to medical center's hybrid plant**

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County residents welcomed the 1997 opening of the Marion County Medical Center, a new \$29 million medical care facility built to replace two aging neighboring hospitals. Marion County Medical offers 112 medical and surgical beds, 12 ICU beds, 6 birthing suites, and facilities for 14 surgical outpatients. To meet hospital emergency criteria, a 350-ton natural gas engine-driven chiller is on duty to provide comfort cooling during electric power outages.

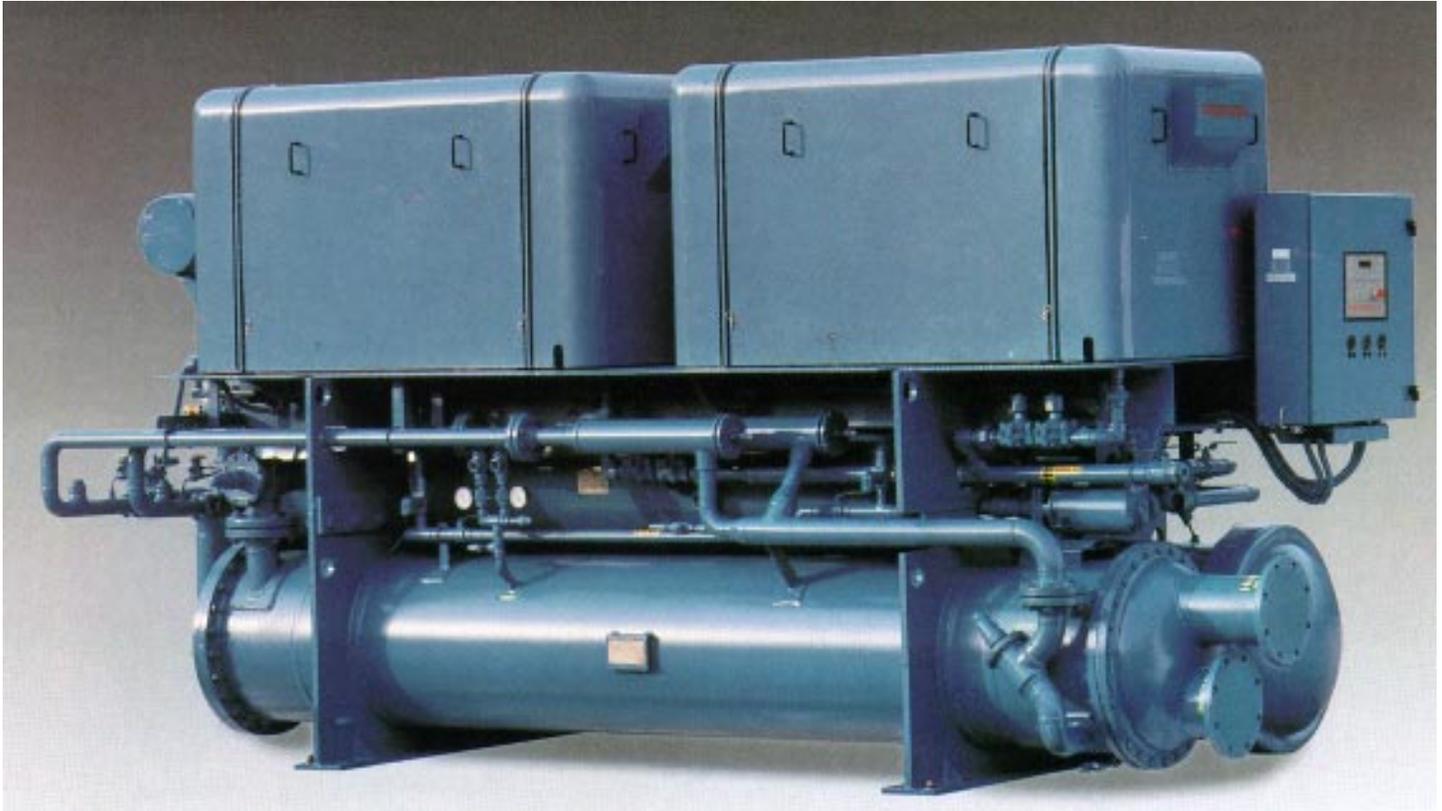
During the design phase, H. H. Angus and Associates of Toronto, Ont. and Greenville, S.C., offered four mechanical designs for the medical center's power plant. Decision makers determined that a natural gas engine-

driven chiller combined in a hybrid plant provided the best economic mix. Incentives from the local utility made the gas cooling option especially attractive.

The medical center requires 700 refrigeration tons. A 350-ton TECOCHILL® DT Series from Tecogen was selected to provide the natural gas engine-driven cooling.

"When the temperature is below 80°F, we can do with one chiller," says hospital Maintenance Supervisor Jack Edwards. In summer when natural gas is abundant and inexpensive, the TECOCHILL® carries the base-load. Throughout the year, the hospital selects its power source based on real-time utility pricing.





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H. H. Angus Senior Designer Kurt Jacobi explains that the medical center's strong desire to provide comfort cooling during times of electric power failure convinced them to choose natural gas cooling. "That's probably what drove the project more than anything," he asserts. Because the gas engine-driven chiller can operate independently, the emergency generator plant's necessary capacity dropped by 200 kW. This cut the cost of emergency power generation equipment by \$78,000.

"Payback with the gas chiller was two years before considering the cost of the emergency generator," H.H. Angus Principal Nick Stark points out. "The two together cut the payback to a

month or so."

Another cost-saving feature of the TECOCHILL® system is its heat recovery ability. Heat captured from the exhaust piping and engine systems is used for space- and potable water-heating. This "free" energy helps decrease operation of the facility's gas-fired hot-water boilers. Total annual energy savings, projected at \$37,500, includes \$15,000 realized through heat recovery.

"It's made a difference," declares Edwards during the summer of 1998. "In the last 4 to 5 weeks, the boilers have not had to come on once." He calls "preventive maintenance" the key to successful operation of this equipment.

